Bernardy, (E. P.)

Compliments of the Author.

Biniodide of Mercury as a Disinfectant in Obstetrics,

AND

The Value of Biniodide of Mercury as an Antiseptic in Obstetrics.

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BINIODIDE OF MERCURY AS A DISINFECTANT IN OBSTETRICS.

Read before the Obstetrical Society of Philadelphia, June 4, 1885.

MY attention to the use of biniodide of mercury as a germicide was first attracted by Dr. Miguel, who published in *L'Annuaire Météorologique de Montsouris* the results of some experiments made to determine the minimum amount of a disinfectant necessary to prevent fermentation in a litre of sterilized beef-broth. His experiments show that the mercurials are the best antiseptics, the biniodide being nearly three times as strong as the bichloride. In his table of disinfectants he places the bichloride the fourth on the list. To a litre of sterilized beef he found it took 0.025 gramme of the biniodide of mercury to render the beef pure, while 0.070 gramme of the bichloride of mercury was necessary to produce like results. This shows that bacterial life is impossible in a solution of *one-forty-thousandth* part of the biniodide, while of the bichloride it takes the *one-fourteen-thousandth* part.

I was so forcibly impressed with his experiments that I determined to give the biniodide of mercury a trial in obstetric

cases where it would be necessary to use an antiseptic. The following are the cases in which the preparation was used.

Case I.—On February 7, 1885, I was requested to take charge of Mrs. D., who had been confined about six weeks previously. The history was as follows. It was her second confinement. The duration of labor was short, delivery natural, but followed by an extensive laceration of the perineum. No attempt was made to bring the parts together by stitches. On the third evening she was suddenly taken with severe frontal headache and chills, followed by a fever, with great tenderness over the region of the uterus. There being seemingly no improvement in her condition, her medical attendant was discharged and another called in, who gave such an unfavorable prognosis that he also was requested to cease his attendance. I was finally called in on the above date.

I found the patient with well-marked symptoms of septic poisoning, pulse 130 to 140, small and thready, and could be made to disappear under pressure of the finger; temperature 104°–105°; slightly delirious; constant vomiting; abdomen swollen and excessively tender; uterus enlarged and extending fully three inches above the pubis. In the right side there seemed to be a growth extending up into the abdomen and tender on pressure. On making a vaginal examination, I found the os dilated so my index-finger could readily enter the uterus. Its withdrawal was followed by a gush of highly-offensive matter. The uterus was surrounded by organized lymph and immovable. On the right side the growth could be easily detected, and was found to be a continuation of the lymph surrounding the uterus. The vagina was hot.

The perineum was ruptured down to the rectum, the surface raw and secreting an acrid matter which scalded the parts. The urine was dark, and on deposit a reddish material settled to the bottom, looking like blood. My friend Dr. A. E. Roussel kindly examined the specimen. The result was as follows: very slightly acid; no albumen nor sugar; microscopic examination detected occasional pus-corpuscles, while the entire field was teeming with bacteria.

In conjunction with internal treatment, intra-uterine injections were made three to four times a day. I first used a solution of bichloride of mercury (one to two thousand). This was continued for three days without any marked results; the discharges continued as offensive. On the fourth day the bichloride was changed to the $\frac{1}{4000}$ solution of the biniodide of mercury. Within twenty-four hours an amelioration of all symptoms took place; the pulse fell to 100, the temperature to 101°; urine clear, and the discharge odorless. The injections were continued for ten days, their frequency being gradually reduced. The uterus returned to almost its normal size, and the lymph was gradually absorbed. The patient recovered.

Case II.—On March 19, 1885, I was called to attend Mrs. W. in her first confinement. On my arrival, found she had been in labor several hours. Examination showed the os perfectly dilated; bag of waters protruding; head presentation, first position; ruptured the waters. The vagina near its outlet was roughened with venereal warts, which spread also over the vulva. Labor progressed rapidly, and in a short time the patient was delivered of a boy. After waiting nearly an hour, making compression on the uterus, I made

slight traction on the cord, and while doing so felt with my left hand, which was upon the uterus, a cup-like depression of the fundus take place. This convinced me that I had an adherent placenta to deal with, and it would be folly to wait any longer. On introduction of the hand I found the placenta completely adherent,—one could hardly say which was uterus, which placenta. After considerable trouble, I at last succeeded in detaching the placenta. It took me fully three-quarters of an hour. On making a second examination to ascertain if all had been removed, my hand came in contact with long shreds hanging from all sides of the uterus; the more I scraped, the more they seemed to be. Believing discretion the better part of valor, I ceased my attempts and gave the patient two drachms of the fluid extract of ergot. The patient did well till March 21, when, towards evening, she complained of having a chill and severe frontal headache. I gave her ten grains of quininæ sulph. with one-fourth grain of morph. sulph. at one dose, and washed out the uterus with $\frac{1}{4000}$ solution of the biniodide of mercury. When the chill set in her pulse ran up to 115, the temperature to 102°. The discharge was highly offensive. The injections were repeated every four hours. On the evening of the next day the pulse was 98, the temperature 100°, discharge perfectly sweet. The patient was discharged on the thirteenth day, cured.

Case III.—On the evening of April 23, 1885, I was requested to call at once to see Mrs. K., who was reported as dying. This was her ninth confinement. The history of her previous confinements, with the exception of one, was not good. Her labors were natural, but immediately on the expulsion of the child

terrible floodings occurred, the patient almost losing her life before they were checked. Convalescence was protracted. On my arrival I found the patient in an attack of puerperal convulsions. I gave her at once half a drachm of potass. bromide and twenty grains of chloral hydrate, which was repeated in half an hour: ten minutes after the last dose another convulsion occurred. I then bled the patient freely. On vaginal examination, there was no sign of labor having set in: the os was somewhat enlarged, soft, and dilatable; vertex presentation. Dr. Curtin, whom I had sent for, arrived, confirmed my opinion of the condition of the os, and, considering that the patient's time was nearly up, we decided to etherize, gradually dilate the uterus, and deliver. The forceps were applied through an os dilated to twice the size of a silver dollar. Traction was made to imitate nature as closely as possible: after some little time I delivered the patient of a living child, Dr. Curtin in the mean while keeping steady pressure over the uterus. Some adhesions of the placenta existed, but not of any moment. After its expulsion the uterus would not contract; it was then freely washed out with hot water, causing contraction. The chloral hydrate and potassium bromide were continued every two hours. There was no recurrence of convulsions. The patient did well up to the fourth day, when the discharge became very offensive; slight acceleration of pulse, and slight tenderness over the uterus; no chill nor fever. I ordered the uterus to be thoroughly washed out with a solution of the $\frac{1}{4000}$ of biniodide of mercury. Within twenty-four hours the discharge had no odor, and the tenderness over the uterus disappeared. The patient finally recovered, after a most tedious convalescence.

In the above cases it will be seen that the biniodide of mercury was prompt in its action, markedly so in Case I., where the bichloride and biniodide were both employed, the result being decidedly in favor of the biniodide. Naturally, it will be said here are only three cases from which deductions are to be drawn, and it is only after it has been carefully used in a large number of cases that its efficacy can be proved. It is for this reason that I call to it the attention of the members of this Society, who are in a position to give it a fair and impartial trial, so that at some future time they may give the results of their investigations.

I have found the solution of the biniodide (one to four thousand) non-irritating. I have used it extensively in my gynæcological practice, and in washing out pus-cavities, with good results. In it we have a preparation where the smallest amount of medicine is used, with results far exceeding those of any other antiseptic. On account of the small quantity of mercury, there will be certainly less chance to salivate the patient, a result that has followed the use of the bichloride.

The method I have pursued in making the biniodide salt solution is as follows. Take one and three-quarter grains of the salt, place it in a mortar and gradually break up its particles, after which slowly add one pint of boiling distilled water. This gives a $\frac{1}{4000}$ solution.

Since writing the above, I noticed in

the *Philadelphia Medical Times* of May 16, 1885, that Dr. Panas, eye-surgeon of the Hôtel-Dieu, uses the $\frac{1}{25000}$ solution of the biniodide of mercury in eye-cases. He makes the following statement: "After a number of experiments, I have convinced myself that a solution, $\frac{1}{10000}$, of the bichloride of hydrargyrum, or a similar solution of the biniodide of mercury, $\frac{1}{25000}$, is much superior to any antiseptic solution employed in eye-surgery." Here, again, we have a statement that the biniodide in a smaller quantity is as good if not a better antiseptic than the bichloride.

Dr. Panas has two methods in which to prepare the biniodide solution. First, by allowing the necessary quantity of the biniodide salt to macerate for a long time in cold water, and shaking from time to time; secondly, by dissolving in water at 50° C. one gramme of the biniodide in twenty-five litres of the water, or any proportional quantity.

THE VALUE OF BINIODIDE OF MERCURY AS AN ANTISEPTIC IN OBSTETRICS.

[SECOND PAPER.]

Read before the Obstetrical Society of Philadelphia, April 1, 1886.

AT a meeting held June 4, 1885, I had the pleasure of reading before this Society a paper on the "Value of Biniodide of Mercury as an Antiseptic in Obstetrics." It was with hesitancy that I brought forward the claims of a new agent whose properties were at that time comparatively unknown. My only knowledge of its effects was that which I had derived from reading the experiments of Dr. Miguel, of France, and from my experience in three cases. To-night I again bring it to your notice, not as an unknown and untried antiseptic, but as one which has proved itself far superior to any of this class of preparations which I have thus far used in my obstetric practice.

Since writing my first paper, I have learned that the biniodide of mercury has been used for the past year in preference to all other antiseptics at the Lariboisière Maternité of Paris, and the reports of the results obtained have likewise been highly favorable.

In a letter written by Dr. Thomas Linn from Paris, France, to the *Philadelphia Medical Times* (March 6, 1886), referring to the subject of antisepsis, the following passage occurs:

"Professor Panas has again something to say about antisepsis in eye-surgery, principally in the treatment of cataract. The principles that guide him are, first, to make use of an antiseptic that is *sure* and *not irritating* in its action. . . . . Of all the antiseptics which he has used during the last two years, Dr. Panas has now definitely adopted a solution of the biniodide of mercury in 20 to 1000 ($\frac{1}{20}$ to 1000 ?).* Even in 40 to 1000 ($\frac{1}{40}$ to 1000 ?), this salt possesses a very strong anti-fermentative power, so that at double the strength nothing should resist it. . . . . As to the other antiseptics used: boric acid is not irritating, but its antiseptic power is doubtful; the bichloride of mercury is more irritating than the biniodide, and its antiseptic power is not half so great."

These remarks fully substantiate the opinion expressed in my former paper, that I considered the biniodide of mercury far superior to the bichloride of mercury as an antiseptic. Of course, the cases of Dr. Panas belong to eye-surgery; but still the experiments made in both classes of cases led to the same conclusions.

I have here the history of eight other cases in which I found it necessary to use

* Evidently an error in proportion, as in the formula given it is 1-20 gramme to the litre, or 1 to 20,000.

the biniodide. I have perhaps given a fuller detail of circumstances than may appear necessary. If I have so erred, I have done it for the purpose of fully and clearly showing under what conditions the antiseptic was used.

It will be observed how readily offensive odors disappeared after only a few injections of the biniodide. In some of the cases the odor around the patient was perfectly horrible.

Case I.—On September 9, 1885, I was requested to attend Mrs. F., residing at Fifty-fifth and Vine Streets, in her fifth confinement. Her previous labors had taken place in Belgium, and had always been terminated by the forceps; only two children being born alive. The first and third lyings-in were complicated by attacks of puerperal fever.

I arrived about 2 P.M. Found the patient had been in labor since the previous evening (8 P.M.). On examination, found the os completely dilated, head presenting; while to the left I felt what seemed to be a prolapsed cord. The head seemed jammed between the promontory of the sacrum and the pubes. I ruptured the bag of waters, so I could make a more decisive examination. Down came a loop of non-pulsating cord, which proved to be irreducible on account of the position of the head. The presentation was now made out to be a partial brow; an antero-posterior contraction existed; the promontory of the sacrum caught the side of the head and pinned it in position. I attempted to push the head up, but soon found it could not be done. I then attempted to produce flexion, and failed. Wallace's forceps met with similar results: on account of the unnatural

position of the head, the forceps constantly slipped. By this time I was completely exhausted. I gave one-half grain of morphiæ sulph., which would insure the patient needed rest, as her pains had all along been active.

On my return at 5 P.M., found the condition of things the same. Dr. A. E. Roussel, who came with me, etherized the patient. I again attempted to change the position of the head, but failed. Pajot's long forceps were applied, but on the slightest traction they would slip. Tarnier's forceps seemed to grasp the head in a firmer manner, but they finally gave way. I had now worked continuously for two hours. Seeing there was no other resource, I perforated the head, and within twenty minutes the child was extracted, which weighed, without the brains, fifteen and one-half pounds.

The patient was living on the second floor, in a room partitioned off the main room of a factory. The room was well located and freely supplied with fresh air. Her husband was the nurse. The next day found the pulse 100, temperature 101°; extreme tenderness over the abdomen, especially over the region of the uterus. I washed out the uterus with the $\frac{1}{1500}$ solution of the biniodide of mercury, and left orders to have it done four times a day. The second visit found the patient free from pain; pulse 80, temperature 98⅘°. Convalescence went straight on as in a normal labor. On the fourth day there was considerable pain over the uterus. Towards evening, while washing out the vagina, a clot of blood about the size of a pigeon's egg was expelled, perfectly free from odor. The patient was up on the eighth day.

Case II.—Was called (October 5, 1885) to attend Mrs. Mc., age 30, third confinement.

After an easy labor she was delivered of twins. The placenta came away naturally, and everything went well up to the evening of the sixth day, when she became suddenly feverish and thirsty. The vaginal discharges became highly offensive,—so much so that the windows had to be constantly kept open. I immediately ordered injections (hot) of the $\frac{1}{4000}$ solution of the biniodide of mercury, asking the patient to note particularly when the odor disappeared. The first injection was followed by no effect; but on the second injection being made, the odor disappeared, and did not return during convalescence. Discharged on the tenth day, well.

Case III.—On the morning of October 7, 1885, I was called to attend Mrs. B., age 28, sixth confinement. About a month previous she had called at my office, and I had given my opinion that the child she was carrying was undoubtedly dead, and that she was likely to fall in labor at any time. On my arrival at the house, found, after examination, the os perfectly dilated and the bag of waters protruding between the vulvæ. Ruptured the bag of waters, and of all stenches I never smelled the like. The windows had to be thrown open. On pushing my examination, found a small hydrocephalic child descending. Labor was lingering, but finally the child (in a putrid condition) was expelled naturally. The placenta came away without any trouble.

I ordered the patient to be washed out with $\frac{1}{4000}$ solution of the biniodide of mercury four times a day. The first injection I administered myself. The second and third injections were followed by a slight stinging sensation, which I believe came from using water

which was too hot; but, to make certain, I reduced the biniodide to the $\frac{1}{8000}$. Within two days the discharges became perfectly odorless. Each injection was followed by a feeling of ease and comfort. Discharged well on the ninth day.

Case IV.—On October 23, 1885, I was requested to attend Mrs. R. in her fourth confinement. Her third lying-in had been followed by a severe attack of puerperal fever. Upon examination, found the os rigid, dilated about an inch; waters ruptured; vertex presentation, right occipito-posterior position. Labor was lingering, os remaining somewhat rigid. About 9 P.M., no headway having been made, and the patient showing symptoms of exhaustion, she was fully etherized. I then applied Wallace's forceps and delivered her of a living child; no laceration. The next day she complained of pain over the region of the uterus. Ordered one-eighth grain morphiæ sulph. in tablespoonful of camphor-water every two hours. On my next visit found the tenderness had increased and the discharges from the vagina were becoming offensive. Ordered hot injections of the $\frac{1}{4000}$ solution biniodide of mercury. The following day the discharges were free from odor, the tenderness of the uterus abated. Discharged well on the fourteenth day.

Case V.—On the morning of November 3, 1885, I was asked to see Mrs. C.,—first confinement. In this patient a year previously I had dilated a constricted os. Pregnancy was ushered in with marked kidney-trouble: the urine yielded over thirty per cent. of albumen. The patient was enormously swollen from dropsical effusion. The case from the start was not a promising one. On arriving at the house,

found the patient very nervous; on examination, found the os slightly rigid, but dilating, the waters ruptured. Labor dragged on slowly all day, with very little advance. Towards twelve, midnight, she suddenly went into a spasm; I immediately etherized her; by the time she was completely etherized Dr. Curtin, whom I had sent for, arrived. On examination the os was found dilated, slightly rigid. The ether was pushed, with the effect of softening the os. I then applied Simpson's forceps, but they would not hold; Wallace's long forceps were applied, and in a short time the patient was delivered of a fine bouncing boy; no laceration.

The next visit found the patient doing well; pulse about 80, temperature normal. On my second visit the temperature was 102°, pulse 120–130, great fever, excessive tenderness of the uterus, the discharges very offensive. This sudden change was caused by the stupidity and incompetency of the nurse. The nurse being discharged, the mother of the patient undertook to nurse her. I immediately ordered hot injections of $\frac{1}{4000}$ solution of biniodide of mercury. The second injection the odor disappeared, but in this case did not remain away: I believe it was on account of not having a competent person to use the injections. Even as imperfectly as my orders were carried out, the biniodide held the odor under control, as the discharges were never as offensive as before its use. The patient was discharged well on the fifteenth day.

Case VI.—On November 11, 1885, I attended Mrs. L. in her fifth confinement; her last two confinements had been followed by puerperal fever. She had been delivered by an excellent and careful obstetrician. She dreaded the present confinement. On arrival, found the

child was born; in a short time the placenta came away. The next visit found the patient doing well, with the exception of some tenderness over the uterus. Being compelled to leave the city, I handed the case over to Dr. A. E. Roussel. On his first visit the patient was feverish, pulse 104, temperature not taken, discharges extremely offensive, excessive tenderness over the uterus. Internally, two grains of quinia and one-eighth grain morph. sulph. were ordered every three hours, and four times a day hot injections of the $\frac{1}{4000}$ solution of the biniodide of mercury. On his next visit found the patient better and the discharges free from odor. The patient was discharged on the ninth day well, feeling satisfied that the *red pills*, as she called the pellets of the biniodide, had saved her from another attack of puerperal fever.

Case VII.—Mrs. B., on December 28, 1885, miscarried about the fifth month. On my arrival at the bedside, found the fœtus had been expelled early during the day; the hemorrhage had been excessive; on examination, found shreds of placenta in the vagina, could detect a larger portion in the uterus; the patient declined any interference, stating that it would come away itself. The patient lived in a small ill-ventilated house, up a court, having for nurse the neighboring women. Gave freely of ergot, but without effect; within twenty-four hours the odor from the vaginal discharges was highly offensive; ordered the $\frac{1}{4000}$ solution of the biniodide of mercury to be thrown up the vagina four times a day; a few injections readily dissipated the odor. On the fifth day the remaining portion of the placenta came away, free from odor. The patient was discharged well on the tenth day.

Case VIII.—On March 20, 1886, I was requested to attend Mrs. ——, wife of a physician. On my arrival at the house, found that labor-pains had set in about 4 A.M. Saturday morning; examination showed the os soft and dilating, waters broken, vertex presentation; labor continued throughout the day, and terminated naturally at 10.15 P.M.; no rupture of the perineum, but the mucous membrane of the vagina, just behind the posterior fourchette, yielded to the extent of half an inch; there was a tendency to post-partum hemorrhage, which was readily checked by compression and the administration of ergot. Next day, pulse 92, skin rather hot, natural flow from the vagina. On my next visit, Monday, March 22, pulse 130, temperature 103½°, pain over the left side of the uterus; the uterus appeared flabby, not having well contracted. Same day at five o'clock, pulse 130, temperature 104°, discharges from the vagina highly offensive. Ordered the vagina to be washed out with a solution of carbolic acid (twenty per cent.), ten grains of sulphate of quinine morning and night, and twenty drops of tincture of digitalis every three hours. Midnight, same day, pulse irritable, quick, and compressible: pulse 128, temperature 103°, the discharges from the vagina still offensive. Next morning, temperature and pulse the same; no change. Ordered the $\frac{1}{1000}$ solution of the biniodide of mercury to be thrown up the vagina, and if possible into the uterus; the injections were administered by the husband, and were thoroughly applied. On the 24th the condition of the patient seemed improved: temperature 102°, pulse 115–120.

On the next morning the husband called at my house and informed me that his wife was in every way worse; the pulse was so irregular that he could not count it; temperature 104°; patient

vomited several times; tendency to diarrhœa. I asked Dr. Goodell to meet me in consultation. On arriving at the bedside of the patient, found her in a remarkably good condition; pulse 100, temperature 102°; examination showed slight laceration of the mucous membrane in the vagina, uterus was contracted; treatment to be continued, with this addition if the case did not get along well: to use ten-grain vaginal suppositories of iodoform in conjunction with the biniodide injections. These suppositories were not used, as the case from this day did well, with this exception, that on the 27th March, or the seventh day of confinement, she was allowed to get up and use the night-vase. This was followed by a severe secondary hemorrhage, which was checked by hot-water injection and ergot. From the time the biniodide was used the vaginal discharges were free from any offensive odor, and it seemed to have a decided influence on the temperature. The patient is still under treatment.

We have here eight cases added to the three of my first paper, making in all eleven cases. This certainly gives us sufficient data to draw conclusions.

The deductions drawn from my early cases are fully sustained by my subsequent experience, and in my mind fully establish the value of the biniodide of mercury as an antiseptic in obstetric practice.

In my first series of experiments, to make my solution of the biniodide I took one and three-quarter grains of the salt, placed it in a mortar, and gradually broke up its particles, after which I slowly added one pint of boiling distilled water. This

gave me a $\frac{1}{4000}$ solution. This took a long time, and often alcohol had to be added to dissolve the mercury.

Mr. J. F. Hayes, of St. George Pharmacy, conducted a series of experiments for the purpose of placing the biniodide in the hands of the physician in a convenient and readily-soluble form. To obtain this end, pellets were made of three different strengths. In making them sufficient iodide of potassium was added for the purpose, though not enough to cause any chemical change with the biniodide. The following is the method pursued in making the pellets. Both salts should be perfectly dry. The potassium iodide is first placed in a mortar which has been slightly warmed (just enough to take the chill out of it), and thoroughly powdered; the biniodide is then added and well mixed, but not rubbed hard, or the powder will be apt to cake. Care must be taken not to compress the pellets too hard: they keep just as well and are more easily dissolved when they are compressed just hard enough to make a firm pill. The following is the formula for the pellets:

$\frac{1}{4000}$ = mercuric iodide $3\frac{21}{25}$ grains, potassium iodide $2\frac{1}{2}$ grains. Mix as above, and compress in pellet.

$\frac{1}{8000}$ = mercuric iodide $1\frac{23}{25}$ grains, potassium iodide 1 grain. Mix as above, and compress in pellet.

$\frac{1}{15000}$ = mercuric iodide $1\frac{6}{2500}$ grains, potassium iodide $\frac{3}{4}$ grain. Mix as above, and compress in pellet.

In this form the preparation can easily be carried in the satchel. When required for use, one pellet is to be added to a quart of hot water (110°). It dissolves easily, and does not stain the clothing or bedding.

The strength which I generally use is the $\frac{1}{4000}$. Should it appear too strong, the pellet can be cut in half, or twice as much water used, thus giving a $\frac{1}{8000}$ strength.

Extract from Discussion on the above by the Philadelphia Obstetrical Society.

The following letter from Dr. Francis L. Haynes was read:

"In reference to the potassio-mercuric iodide, I may add a little to the facts I mentioned in our conversation. The last case of puerperal septicæmia I have seen in my own practice occurred in Mrs. F., confined December 18, 1885. It was due to the fact that my hands were contaminated with septic matter, and that I trusted entirely to hard scrubbing and to inunction with oil of turpentine to purify them (after Goodell). In this case the pulse was 138, and the temperature ran up to 105°, but she recovered in a few days under copious injections of hot water into the uterus (generally plain, but sometimes with a little carbolic acid added). Three injections were given, and during the days on which this treatment was being used I attended several cases of labor, purifying myself with ten-per-cent. solutions of carbolic acid. These cases had no trouble; but I became ill, as I always do when I use much carbolic acid, and my hands became sore. I now began to use the potassio-

mercuric-iodide solution to purify my hands, and since then have had no trouble whatever, although I have attended cases of labor within a few hours after (1) washing out the uterus of a patient of Dr. L.'s suffering from septicæmia (terminating fatally); (2) after amputating finger and metacarpal bone of a man suffering from gangrene of finger and suppurative cellulitis of the hand and wrist; (3) after digging out putrid placenta after miscarriage (several instances); (4) after performing autopsy in a case of suppurative peritonitis and bathing my hands freely in the pus. The solution may be used without apparent injury to purify blunt instruments, and it is certainly a great comfort to soak your speculum thoroughly in it after treating a case of gonorrhœa.

"How is the solution prepared? A four-ounce bottle is marked with a diamond so as to indicate drachms, and filled with distilled water containing ʒj each of potassium iodide and mercuric iodide. (The cost of this solution is less than ten cents.) It is now a very easy matter to make a solution of any desired strength extemporaneously: a tablespoonful to the pint—one part to one thousand—is the strength I generally employ, but after autopsies I use one to five hundred.

"How do I prevent my hands from becoming eczematous when using this solution? Once or twice daily, after washing the hands, and while they are still damp, about fʒss of glycerin is poured into the palm and thoroughly rubbed into the whole surface of the hands, which are then dried as usual. This is very effectual."

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